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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,791	08/17/2006	Michael Dankert	2003P12715WOUS	3862

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SIEMENS CORPORATION
INTELLECTUAL PROPERTY DEPARTMENT
170 WOOD AVENUE SOUTH
ISELIN, NJ 08830

EXAMINER

DAVIS, OCTAVIA L

ART UNIT	PAPER NUMBER
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2855

MAIL DATE	DELIVERY MODE
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02/26/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/589,791	DANKERT ET AL.	
	Examiner	Art Unit	
	OCTAVIA DAVIS	2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-41 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 22-41 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8/17/06 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/17/06</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because of the legal phraseology term "means" on line 4.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 22, 23, 25 - 28, 33, 37 and 38 are rejected under 35 U.S.C. 102(e) as being anticipated by Spitsberg et al (7,309,530).

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Regarding claims 22 and 23, Spitsberg et al disclose a thermal barrier coating with reduced sintering and increase impact resistance comprising measuring a material parameter of a component a number of times, wherein the material parameter is thermal conductivity (See Col. 11, lines 1 - 15)

Regarding claim 25, the measurement is done nondestructively (See Col. 10, lines 65 – 67).

Regarding claims 26, 27 and 33, the component comprises a substrate, a first layer and an outer layer (See Col. 7, lines 33 – 36, See Fig. 2).

Regarding claim 28, the changes in the substrate are caused by cracks in the substrate and a change in the layer (See Col. 1, lines 27 – 31 and 61 – 67).

Regarding claim 37, the component is a turbine blade of a combustion chamber (See Col. 7, lines 15 – 32).

Regarding claim 38, the material parameter is performed in a sequence (See Col. 11, lines 1 – 15).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 24, 29 – 32, 34 – 36 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spitsberg et al (530^b) in view of Zheng (6,635,362).

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Regarding claims 24, 29 and 41, Spitsberg et al disclose all of the limitations of these claims except that a subsequent material parameter measurement is performed at a time interval after the first measurement and after or during the first operational use. However, Zheng discloses high temperature coatings for gas turbines comprising an inspection of a mechanical test material parameter of the coating including examining microstructural changes in the layer caused by cracks in the layer, the substrate being an alloy and examining the changes caused by depletion of the alloy of which results are recorded (See Col. 7, lines 44 - 67 and Col. 8, lines 1 - 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Spitsberg et al according to the teachings of Zheng for the purpose of, advantageously providing a coating that possesses ductility to minimize crack propagation, while still preserving the necessary oxidation resistance conferred by the presence of an adequate amount of aluminum in the coating (See Zheng, Col. 1, lines 46 - 51).

Regarding claims 30 - 32, in Spitsberg et al, the layer is a porous ceramic layer (See Col. 1, lines 27 - 31) and the thermal conductivity is measured using a laser flash method (See Col. 1, lines 61 - 67).

Regarding claims 34 - 36, in Spitsberg et al, the substrate 10 is a nickel-base superalloy and the layer is and McRAIX layer (See Col. 7, lines 15 - 32 and Col. 10, lines 66 - 67).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary

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skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spitsberg et al (530') in view of Spitsberg et al (6,960,395).

Regarding claims 39 and 40, Spitsberg et al disclose all of the limitations of these claims except that a time period is determined where the component is inspected, refurbished or replaced once a predefined percentage change in the material parameter is exceeded. However, Spitsberg et al disclose a ceramic composition useful for thermal barrier coatings having reduced thermal conductivity comprising a coating that is inspected once a predefined percentage change in thermal conductivity is exceeded or increase, wherein the coating is used with a substrate of an article 10 (See Col. 5, lines 34 - 44 and lines 48 - 53).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Spitsberg et al according to the teachings of Spitsberg et al for the purpose of, desirably minimizing or reducing a sintering process in a coating so as to maintain the efficacy of the coating and to improve the reduced thermal conductivity of the coating (See Spitsberg et al, Col. 7, lines 44 - 56).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Dariola et al (7,087,266) disclose a thermal barrier coating and process therefore.

Dariola et al (6,982,126) disclose a thermal barrier coating.

Dariola et al (6,979,498) disclose strengthened bond coats for thermal barrier coatings.

Alperine et al (6,333,118) disclose a heat barrier composition, a mechanical superalloy article provided with a ceramic coating having such composition, and a method of making the ceramic coating.

Antonelli et al (7,010,987) disclose a non-destructive method of detecting defects in braze-repaired cracks.

Ackerman et al (6,887,588) disclose an article protected by thermal barrier coating having a sintering inhibitor and its fabrication.

Schnell et al (7,150,798) disclose a non-destructive testing method of determining the service metal temperature of a component.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Octavia Davis whose telephone number is 571-272-2176. The examiner can normally be reached on Mon through Thurs from 9 to 5. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz, can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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2/17/08

/Michael Cygan/

Primary Examiner, Art Unit 2855